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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/585,011

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EXAMINER

BAIRD, EDWARD J

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/585,011	Applicant(s) EGNER ET AL.	
	Examiner Ed Baird	Art Unit 3695	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 August 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) 11-21 and 32-42 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 22-31, 43 and 44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>See Continuation Sheet</u> . | 6) <input type="checkbox"/> Other: _____ |

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :29 June 2006, 12 August 2008, 17 September 2008 and 26 March 2009..

DETAILED ACTION

In response to Election/ Restriction filed 17 August 2009, Applicant has elected Group I, claims 1 – 10 and 22 – 31 without traverse. Applicant has added claims 43 and 44. Claims 11 – 21 and 32 – 42 have been withdrawn from consideration. Hence, claims 1 – 10, 22 – 31, 43, and 44 remain pending and are presented for examination.

Claims 1 – 10, 22 – 31, 43, and 44 are rejected under 35 U.S.C. § 101, 112, second paragraph and 103(a).

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 1 – 10, 43 and 44 are rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter.

3. **Claims 1 – 10, 43 and 44**, method claims, are rejected under 35 U.S.C. §101 because, in order to comply with §101 a process/ method must (1) be tied to a particular machine or apparatus, or (2) transform underlying subject matter (such as an article or materials) to a different state or thing.

The methods recited in the claims fail to (1) be tied to a particular machine or apparatus, or (2) transform underlying subject matter to a different state or thing. *Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972).

There are two corollaries to the machine-or-transformation test. First, a mere field-of-use limitation is generally insufficient to render an otherwise ineligible method claim patent

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eligible. This means the machine or transformation must impose meaningful limits on the method claim's scope to pass the test. Second, insignificant extra-solution activity will not transform an unpatentable principle into a patentable process. This means reciting a specific machine or a particular transformation of a specific article in an insignificant step, such a data gathering or outputting, is not sufficient to pass the test.

There is no recitation within the claims to indicate that the steps that comprise the method are nothing but mental steps performed within the mind of a person. Thus, to qualify as a § 101 statutory process, the claim should positively recite the other statutory class (the thing or product) to which it is tied, for example by identifying the apparatus that accomplishes the method steps, or positively recite the subject matter that is being transformed, for example by identifying the material that is being changed to a different state.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1, 7, 9, 22, 28 and 30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Regarding **claims 1 and 22**, the preamble states “a method of/ a computer program product for, analyzing a capital investment”. However, the limitation:

- analyzing an area for the capital investment, the analyzing being based at least in part on the investment return per sector.

is not tied to the limitations:

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- determining a subscriber profit proxy for a plurality of subscribers;
- determining a number of minutes of use for one or more of the subscribers;
- determining a service quality metric for one or more sectors in the wireless network;

The claims need to be structured so that the method steps show how they relate to the other method steps within the claim.

The claims have been examined to the best of the Examiner's ability given the lack of clarity. Appropriate correction is required.

7. Regarding **claims 7 and 28**, the claim term:

- the investment needed per sector to recover dropped call in each sector.

It is not clear to the Examiner what the term "investment needed per sector to recover dropped call" means.

For purposes of examination, the term "investment needed per sector to recover dropped call in each sector" will be interpreted to mean "investment needed to prevent dropped calls from occurring in each sector". Appropriate correction is required.

8. Regarding **claims 9 and 30**, the investment return is being determined. However, it is not clear to the examiner whether R_k is the total investment return or the investment return for sector k .

For purposes of examination, the claim will be interpreted to read: "wherein the determining the investment return of a sector is performed in accordance with the equation: . . .". Appropriate correction is required.

Also, the claim limitation:

- I_k is investment needed to investment needed to recover dropped call in sector k .

It is not clear to the Examiner what the term "investment needed to investment needed to recover dropped call" means.

For purposes of examination, the term “investment needed to investment needed to recover dropped call in sector k” will be interpreted to mean “investment needed to prevent dropped calls from occurring in sector k”. Appropriate correction is required.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1, 4, 22, 25, 43 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Adduci et al** (US Patent No. 7,343,334) in view of **Elliott** (US Patent No. 7,158,790).

11. Regarding **claim 1 and 22**, **Adduci** teaches:

- determining a subscriber profit proxy for a plurality of subscribers [see at least column 15 lines 6 – 8, and column 16 lines 9 – 28] – Examiner interprets *net present value (NPR)* as analogous to Applicant’s **subscriber profit proxy**;
- determining an investment return per sector for one or more of the sectors [see at least column 16 lines 9 – 53] – Examiner interprets *return on investment (ROI)* as analogous to Applicant’s investment return per sector. Examiner notes applying *financial analysis* to different *geographic regions* as indicative of Applicant’s application to **one or more of the sectors**.
- analyzing an area for the capital investment, the analyzing being based at least in part on the investment return per sector [Id.].

Regarding **claim 22** specifically, **Adduci** teaches:

- a computer program product having a computer program product for accomplishing these steps [see at least column 2 lines 30 – 44 and column 5 lines 26 – 43].

Adduci does not explicitly disclose:

- determining a number of minutes of use for one or more of the subscribers;
- determining a service quality metric for one or more sectors in the wireless network.

However, **Elliott** teaches *a system for improving the service coverage of wireless networks by making measurements of the service coverage of the wireless network* [column 2 lines 30 – 44, column 4 lines 56 – 67, and claim 1]. He further discloses *gathering information indicating quality of service coverage and determining actual service coverage of the wireless network in real-time according to actual demand for service* [see at least column 2 lines 45 – 61]. Examiner interprets *demand for service* as indicative of Applicant's **number of minutes of usage of the subscribers**.

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the instant invention to modify **Adduci's** disclosure to include *quality of service coverage and a demand for service* as taught by **Elliott** because these features can provide an improvement in the service coverage of wireless networks [**Elliott** column 2 lines 30 – 35].

12. Regarding **claim 4 and 25**, **Adduci** teaches:

- the minutes of usage based on call detail records collected during peak usage periods [see at least column 6 lines 42 – 60].

13. Regarding **claim 43 and 44**, **Adduci** teaches:

- deploying the capital investment to a base transceiver station (BTS) serving at least one sector based at least in part on the analyzing the area for the capital investment, wherein the capital investment comprises additional equipment, and

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- the additional equipment is selected from the group consisting of: a radio tower, an antenna, a radio, a cable, and combinations thereof [see at least column 7 lines 4 – 20].

14. Claims 2, 3, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Adduci** in view of **Elliott** in further view of **Official Notice**.

15. Regarding **claim 2 and 23**, **Adduci** teaches:

- revenue collected from the subscriber, an expected number of months under a contract, an acquisition cost, and, a service delivery cost [see at least column 5 lines 38 – 54]

Examiner takes **Official Notice** that *marketing costs* and *maintaining existing customers* are indicative of Applicant's **subscriber contracts** in that one skilled in the art at the time of the instant invention would be aware of such contracts in wireless communication services.

16. Regarding **claim 3 and 24**, **Adduci** teaches:

- subscriber profit proxy (SPP) value determined by the equation:

$$SPP_i = V_i * M_i - A_i - S_i$$

wherein

- V_i is the revenue per month for subscriber i [see at least column 5 lines 26 – 43];
- M_i is the expected months for subscriber i [Id.];
- A_i is the acquisition cost for subscriber i [Id.]; and
- S_i is the service delivery cost for subscriber i [Id.].

Examiner interprets *revenue segment* as indicative of Applicant's **revenue per month** and **months** of service. Examiner interprets *investment, start-up costs, and marketing, advertising and promotional costs* as indicative of Applicant's **acquisition cost**. Examiner

interprets *maintenance costs for supporting the enhanced wireless services* as indicative of Applicant's **service delivery cost**.

Adduci does not explicitly disclose expected months under contract for a subscriber.

However, Examiner takes **Official Notice** that it would have been obvious to one having ordinary skill in the art at the time of the instant invention to modify **Adduci's** disclosure to include *expected duration of a subscriber contract* because such contracts are used to guarantee future revenue.

17. Claims 5 – 10, 26 – 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Adduci** in view of **Elliott** in further view of **Weller et al** (US Patent No. 7,107,224).

18. Regarding **claims 5, 6, 26 and 27**, neither **Adduci** nor **Elliott** explicitly discloses:

- the service quality metric comprising a dropped call rate for each sector; and
- the dropped call rate determined from call detail records collected from each sector.

However, **Weller** teaches a system and method of value-driven build-to-buy decision analysis which includes a demand component and a supply component [column 1 lines 55 – 65]. She applies her system and method to "self-service buying" of cellular phone service over the internet [see at least column 5 lines 48 - 56]. She discloses using parameters such as area of usage, minutes per month of usage, and the number of calls that get dropped [column 5 line 61 – column 6 line 20]. She further uses these parameters to develop "components of value" for the customer [see at least column 7 lines 3 – 38]. These include the intangible costs (based on the customer's willingness to pay) of having no coverage and experiencing dropped calls. Examiner interprets that *intangible cost related to dropped calls* as analogous to Applicant's **service quality metric**.

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the instant invention to modify **Adduci's** disclosure to include *accounting for dropped call*

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rates as taught by **Weller** because, by accounting for such *quality* issues, a customer can make meaningful comparisons between the intangible values of “quality” and “coverage” and the tangible value of “cost” [**Weller** column 6 lines 9 – 20].

19. Regarding **claims 7 and 28**, **Weller** teaches the limitations:

- determining a profit per sector;
- determining a dropped-call rate per sector;
- determining an investment needed per sector to recover dropped calls in each sector;
- determining the investment return per sector based at least in part on the profit per sector, the dropped-call rate for each sector.

as discussed in the rejections of claims 5, 6, 26 and 27, above. **Weller** does not explicitly disclose:

- determining the investment needed per sector to recover dropped call [sic] in each sector

However, it would have been obvious to one having ordinary skill in the art at the time of the instant invention to modify **Weller's** disclosure to include *determining the investment needed to recover dropped calls* because such intangible costs are determined in order that they may be corrected.

20. Regarding **claims 8 and 29**, **Adduci** teaches determining the profit per sector by summing the subscriber profit proxy value for each subscriber [see at least column 15 lines 5 – 50 and column 16 lines 9 -28]. Examiner interprets revenue analysis which includes *average revenue per user per month by customer segment* as indicative of Applicant's **profit per sector**.

Adduci does not explicitly disclose determining a profit based on the ratio of minutes usage in one sector to minutes usage in all sectors. However, **Elliott** discloses *determining*

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actual service coverage of the wireless network in real-time according to actual demand for service [see at least column 2 lines 45 – 61]. Examiner interprets *demand for service* as indicative of Applicant's **number of minutes of usage of the subscribers**, as discussed in the rejection of claims 1 and 22. Accordingly, these claims are rejected for the same reasons.

21. **Claims 9 and 30** are substantially similar to claims 7 and 28, respectively, and are thus rejected for the same reasons.

22. Regarding **claims 10 and 31**, **Weller** teaches the limitations:

- the analyzing the area for the capital investment involves prioritizing the sectors based upon the investment return for each respective sector [see at least column 10 lines 1 – 7].

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the instant invention to modify **Adduci's** disclosure to include *prioritize investments* as taught by **Weller** because it allows companies to get the best possible returns [**Weller** column 10 lines 1 – 7].

Conclusion

The prior art of record and not relied upon is considered pertinent to Applicant's disclosure:

- **Hutcheson et al**: "Method for providing wireless communication services and network and system for delivering same", (US Pub. 2002/0173313).
- **Apostolopoulos et al**: "Information Technology Investment Evaluation: Investments in Telecommunication Infrastructure", International Journal of Information Management, Vol. 17, No. 4, pp 287-296, 1997.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ed Baird whose telephone number is (571)270-3330. The examiner can normally be reached on Monday - Thursday 7:30 am - 5:00 pm Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles R. Kyle can be reached on 571-272-6746. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://portal.uspto.gov/external/portal/pair>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ed Baird/
Examiner, Art Unit 3695

/Charles R. Kyle/
Supervisory Patent Examiner, Art Unit 3695